

Landfill Design Plan

General

This fact sheet provides information required by the Ministry of Environment to complete the approval process for designing a landfill. A person that intends to establish a landfill must apply for a permit from the ministry.

Landfill owners may follow the landfill design best practices or best design practices. Landfills are required to be designed based on design best practices, including lining and leachate collection, and specific site conditions to protect groundwater from potential contamination due to landfill operations. Site suitability information is required for any step in the design stage. If information is not available, a site assessment according to the Site Assessment Chapter of the Saskatchewan Environmental Code is required, including for alteration of existing landfills.

Non-municipal (or private) owned landfills require a financial assurance as required *The Environmental Management and Protection (General) Regulations*, Section 8(2)(o) and 9(1).

Application to Establish, Construct and/or Operate

Landfill owners shall submit an application to Establish, Construct and/or Operate a Waste Disposal Grounds through the ministry's [online business portal](#) in order to receive a permit. Landfill owners will receive an automated email receipt of the document submission. The ministry will review the application in detail over the next six to eight weeks. The application should include the following information:

- A. Site suitability report** – The site suitability report should describe the siting of the landfill and the results of the technical investigation. The technical investigation is used to fully characterize the site-specific design requirement and protect the environment. This information will also be used for the operations plan. The report should include:
 - a) A site plan that details the topography and surface water hydrology within 1,000 metres of the proposed site; and
 - b) A detailed description of the site geologic and hydrogeological conditions.
- B. Design plan** – The report should include a design that meets the applicable best design practices and should:
 - a) Include the location and the surrounding land use;
 - b) Identify the activities proposed, including volumes, types of wastes, and anticipated waste tonnage to be disposed of each year and during the design life;
 - c) Considering the results of the technical investigation, include final sealed engineered drawings that take into account construction quality control assurance procedures and incorporate environmental protection through:
 - Seepage barrier system;
 - Surface water management system;
 - Groundwater monitoring system;
 - Landfill gas management system;
 - Leachate collection and management system; and
 - Final cover system.

- d) Include a site plan showing:
- Legal site boundary;
 - Location of site access, roads, earth works, buildings, and infrastructure; and
 - Hydrologic information, land use and other environmental information.

Construction Verification

Once construction is completed as per the approved design plan, the ministry must be notified prior to commencing operation as per permit requirements. The owner must abide by all conditions as outlined in the Permit to Establish, Construct, and/or Operate a Waste Disposal Ground. Landfill design plans can be submitted through the Ministry of Environment [online business portal](#).

Design Verification

The landfill design plan shall be prepared by a person who possesses the core skills and competencies to design a landfill. The landfill owner shall construct the landfill in accordance to the design.

Landfill Closure Plan

Landfill owners are required to have a preliminary landfill closure plan in place no later than 60 days after the completion of construction of the landfill.

The plan shall include information that addresses, but is not limited to:

- a) physical closure steps, e.g. interim cover, litter cleanup, removal of temporary storage areas;
- b) design and implementation of final cover system;
- c) post-closure care, including environmental monitoring and reporting; and
- d) a corrective action plan implementation (if necessary).

More information can be found in the ministry's [Landfill Closure Guidance Document](#).

Definitions

Landfill – A facility at which solid waste is permanently disposed of by placing it above or below ground (also waste disposal ground)

Design Plan – Project planning for construction of a new landfill or alteration of an existing landfill, based on site characteristics

Buffer zone – The area located between the existing waste footprint and the compliance boundary of the landfill

Compliance boundary – The compliance boundary of a landfill is the property boundary as marked on the site plan, or the property boundary limits of the existing landfill

Design life – The period during which the landfill is designed to accept waste

Alteration – Expansion (trenches, new cells, addition of designated areas, etc.), process change and other modifications, based on site characteristics

Expansion – A horizontal increase outside of the existing waste footprint of a landfill or a volumetric increase of the estimated or designed waste disposal capacity of the existing waste footprint of a landfill

Owner of a landfill – A government agency or municipality, or private owners

Municipality – A municipality as defined in *The Interpretation Act, 1995*, including the Saskatchewan portion of the City of Lloydminster

Private owner of a landfill – A person, other than a government agency or municipality that owns a landfill

On site – A substance on and completely contained within the boundaries of the property owned or occupied by the owner

Waste storage area – The area within the compliance boundary of a transfer station that is designated or designed for the temporary storage of waste

Waste footprint – The area within the compliance boundary of a landfill that is designated or designed for disposal of waste

Best practice - A technique or methodology that is proven as being the best to use in a particular business or industry; usually described formally in regulations or guidelines

Contact and References

Saskatchewan Ministry of Environment

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